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| APPLICATION NO.                                                           | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 09/943,262                                                                | 08/30/2001  | Tohru Ishitani       | 1743/193            | 8263             |
| 23838                                                                     | 7590        | 11/30/2004           | EXAMINER            |                  |
| KENYON & KENYON<br>1500 K STREET, N.W., SUITE 700<br>WASHINGTON, DC 20005 |             |                      | NGUYEN, LAM S       |                  |
|                                                                           |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                           |             |                      | 2853                |                  |
| DATE MAILED: 11/30/2004                                                   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                        |  |
|------------------------------|--------------------------------------|----------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/943,262 | <b>Applicant(s)</b><br>ISHITANI ET AL. |  |
|                              | <b>Examiner</b><br>LAM S NGUYEN      | <b>Art Unit</b><br>2853                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakibayashi et al. (US 5866905) in view of Hosoki et al. (US 3714422).

Kakibayshi et al. disclose a scanning charged-particle microscope (*FIG. 18*) having:

a charged-particle source (*FIG. 18, element 20*),  
a lens for focusing the charged-particle beam emitted from said charged-particle source (*FIG. 18, element 21*), and  
a scanning deflector (*FIG. 18, element 22*) for scanning said charged-particle beam in two-dimensional form on a sample (*FIG. 18, element 24*),  
wherein said scanning charged-particle microscope is characterized in that a passage aperture for limiting the passage of the charged-particle beam having a member for limiting the passage of the charged-particle beam is provided at least in the center of said passage aperture (*FIG. 20, element 409*) (**Referring to claim 1**).

Kakibayshi et al. do not disclose wherein the passage/annular aperture is positioned on the orbit of the charged-particle beam and located between said charged-particle source and said scanning deflector, wherein an image of said sample is obtained by scanning said charged-

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particle beam, which is cut off a band of a half-opening, having passed through said passage aperture on said sample using said scanning deflector (**Referring to claims 1, 5, 8, 12**).

Hosoki et al. discloses an electron microscope having a charged-particle source (*FIG. 1, element 1*), a scanning deflector (*FIG. 6, element 5*), and an annular/passage aperture (*FIG. 6, element 10*) positioned on an orbit of a charged-particle beam (*FIG. 4, element e*) and located between the charged-particle source and the scanning deflector (*FIGs. 1, 6*) to limit the passage of the electron beam to a sample (*FIG. 6, element 6*). Wherein after the electron beam has passed through the annular/passage aperture (*FIG. 6, element 10*), the half-band beam (*FIG. 6*) is deflected by the scanning deflector (*Fig. 6, element 5*) to scan the sample (*FIG. 6, element 6*), that results of forming an image of the sample on an image monitor (*FIG. 1, element 9*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the scanning charged-particle microscope disclosed by Kakibayshi et al. such that inserting the passage/annular aperture on the orbit of the charged-particle beam at a position between the charged-particle source and the scanning deflector as disclosed by Hosoki et al. The motivation of doing so is to enable a stereo-image of a spicemen in changing state to be observed in an easy manner as taught by Hosoki et al. (*column 1, lines 50-55*).

**Kakibayshi et al. also disclose following claimed inventions:**

**Referring to claims 2-7:** wherein the scanning charged-particle microscope is characterized in that the half-opening angle of said aperture for said charged-particle beam focused on a sample by said focusing lens has a band with respect to specific values of  $\alpha_a$  and  $\alpha_b$  and said band having narrower values of said half-opening angle is cut off (*column 19, line 14-*

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51) and a plate-like aperture body formed movably with respect to said charged-particle beam in which an annular aperture and a circular aperture are formed (*FIG. 20, element 409*).

**Referring to claim 8:** wherein said scanning charged-particle microscope is characterized in that a passage aperture for limiting the passage of the charged-particle beam is formed in two different places on the orbit thereof, and in that one of said two apertures is an annular aperture (*FIG. 20, element 409*) and the other is circular aperture (*FIG. 20, element 410*).

**Referring to claim 9:** wherein the scanning charged-particle microscope is characterized in that said annular aperture is formed in a plated-like body (*FIG. 21, element 409*), in that said plate-like body is also provided with a circular aperture (*FIG. 21, element 409*), and in that there is provided a movement feature for positioning the annular aperture and circular aperture on the orbit of said charged-particle beam (*FIG. 20: a corresponding movement feature moves a desired aperture in the body 409 into the orbit of the electron beam*).

**Referring to claims 10, 11, 12:** wherein the scanning charged-particle microscope is characterized in that said circular aperture and said annular aperture are formed in a first plate-like body and a second plate-like body respectively, in that said first plate-like body is provided with a charged-particle optical beam cutoff portion in addition to the circular aperture (*FIG. 20, element 410*) and said second plate-like body is provided with a circular aperture in addition to the annular aperture (*FIG. 20-21, element 409*), and in that both the first plate-like body and the second plate-like body are provided with a movement feature (*FIG. 20: a corresponding movement feature moves a desired annular aperture in the body 409 and a desired circular aperture in the body 410 into the orbit of the electron beam*), and the images on a sample that has

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been acquired with the annular and circular apertures are combined to form a new sample image (FIG. 20).

***Response to Arguments***

Applicant's arguments with respect to claims 1, 5, 8, and 12 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN  
November 2, 2004

  
HAI PHAM  
PRIMARY EXAMINER